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EXAMINER
PENDERGRASS, KYLE M

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
   closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-69* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-69* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

    1.☐ Certified copies of the priority documents have been received.

    2.☐ Certified copies of the priority documents have been received in Application No. _____ .

    3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
       application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date *5/01*.

4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____ .

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-10, 12-14, 17-20, 24-38, 40, 44-45, 47-57, 60-61, & 64-69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Petteruti et al. (US 6,379,058) & Mettala (*Bluetooth Protocol Architecture*).

Regarding claim 1, Petteruti et al., teaches a system with the method for printing a document in a data

communications system, the system including a processing unit including a printer client and a printer

including a printer server, the processing unit and the printer using for communication between each other

a wireless printer protocol (**column 3:lines 63-66**, RF communication interface links a host terminal and

printer), wherein the steps include:

establishing a wireless connection between the processing unit and the printer (**column 3:lines 63-**

66);

establishing a connection for one or more print jobs between the printer client and the printer server

(**column 6:lines 20-23**, the host receives an accept link packet for a print job from the printer via the

RF interface 18);

negotiating configuration parameters between the printer client and the printer server (**column**

8:lines 20-23, negotiation of parameters is processed over the RF interface between the printer and

the host);

sending keep alive messages frequently from the printer client to the printer server and from the

printer server to the printer client (**column 6:lines 49-66**, both the printer and the host can send

different types of packets that maintain connection);

starting a print job (**column 6:lines 10-14**, wake-up packets start the entire print job);

sending the print data from the processing unit to the printer (**figure 5A**, steps 110-120 indicated

data transmission to the printer);

stopping the print job, and closing the connection between the processing unit and the printer (**figure**

7B, when the data transfer is successful, the lack of data sent by the host lets the printer know that

the print job has ended and that the connection will be closed as the host device returns to step 152,

which in **figure 7** is the start of the process before a connection can be made. **Column 7:lines 29-**

31, the printer receives the session number from the host during packet transmission).

Petteruti et al., does not teach using Bluetooth protocol as the wireless communication link.

However, Mettala teaches in "Bluetooth Protocol Architecture, Version 1.0" the Bluetooth protocol

stack including a Logical Link Control and Adaptation Protocol (L2CAP) that allows an asynchronous

connection-less (ACL) connection (pages 7-8, section 2.1.3).

Accordingly, it would have been obvious to one skilled in the art at the time of the invention to

have used the Bluetooth protocol as taught by Mettala as the RF communication link for the method

taught by Petteruti et al., because it provides multiple usage models which increase the wireless system's

communication scenarios as taught by Mettala starting on page 12.

Regarding claim 2, the claim rejection of claim 1 is representative of claim 2. See Petteruti et al.,

teachings of the further step to be taken before the step of establishing a bi-directional wireless ACL

connection: selecting a printer among a number of available printers and obtaining an address of a printer

(**column 5:lines 49-51**, host prompts for specific printer based on address).

Regarding claim 3, the claim rejection of claim 2 is representative of claim 3. See Mettala teachings of

discovery protocol starting on page 8.

Regarding claim 4, the claim rejection of claim 1 is representative of claim 4. See Petteruti et al.,

teachings of the further step to be taken before the step of establishing a bi-directional wireless ACL

connection: obtaining an address of a printer (**column 5:lines 49-51**, host prompts for specific printer based on address).

Regarding claim 5, the claim rejection of claim 4 is representative of claim 5. See Mettala teachings of discovery protocol starting on page 8.

Regarding claim 6, the claim rejection of claim 5 is representative of claim 6. See Petteruti et al., teachings of establishing a connection for one or more printjobs by sending a connection request message from the printer client to the printer server (**column 6:lines 10-14**, a wake up packet is sent from the host to request a connection with the printer).

Regarding claim 7, the claim rejection of claim 6 is representative of claim 7. See Petteruti et al., teachings of establishing a connection for one or more print jobs is performed by responding upon the request whether the connection was successful or not, in a response message sent from the printer server to the printer client (**column 6:lines 14-17**, printer sends ready packet).

Regarding claim 8, the claim rejection of claim 1 is representative of claim 8. See Petteruti et al., teachings wherein the step of negotiating configuration parameters, between the printer client and the printer server, is performed by the printer client requesting configuration in a message sent to the printer server, the message including no new options, if printer client uses default values (**column 8:lines 32-59**, the printer receives a wake up packet with suggested negotiation parameters that include default values).

Regarding claim 9, the claim rejection of claim 1 is representative of claim 9. See Petteruti et al., teachings wherein the step of negotiating configuration parameters, between the printer client and the printer server, is performed by the printer client requesting configuration in a message sent to the printer server, the message including a suggestion of configuration options (**column 8:lines 20-23**).

Regarding claim 10, the claim rejection of claim 9 is representative of claim 10. See Petteruti et al.,

teachings wherein said configuration request is responded to by the printer server in a message indicating

whether the configuration options in the configuration request are supported by the printer server or not

(**figure 6B, step 148**, printer sends ready packet if negotiation parameters are met).

Regarding claim 12, the claim rejection of claim 1 is representative of claim 12. See Petteruti et al.,

teachings of sending a set attribute request message from the printer client to the printer server

comprising a coding table concerning a negotiated coding type (**column 8:lines 20-59**, negotiation of

parameters is processed over the RF interface between the printer and the host. The printer receives a

wake up packet with suggested negotiation parameters, including coding/encoding parameters).

Regarding claim 13, the claim rejection of claim 12 is representative of claim 13. See Petteruti et al.,

teachings of the printer server loading the coding table by means of said received set attribute request

message (**column 8:lines 38-47**, the printer modifies local parameters in accordance with the suggested

negotiation parameters from the host).

Regarding claim 14, the claim rejection of claim 13 is representative of claim 14. See Petteruti et al.,

teachings of sending a response whether the loading of the coding table was successful or not in a

message from the printer server to the printer client (**column 8:lines 44:47**, printer sends a ready

packet).

Regarding claim 17, the claim rejection of claim 1 is representative of claim 17. See Petteruti et al.,

teachings wherein the step of starting a print job is performed by the printer client requesting the printer

server to start a print job in a request message (**column 6:lines 10-14**, host sends wake up packet

starting the print job).

Regarding claim 18, the claim rejection of claim 17 is representative of claim 18. See Petteruti et al.,

teachings wherein said start print job request message is received and confirmed by the printer server,

the confirmation sent in message to the printer client (**column 6:lines 14-17**, ready packet is sent in

response).

Regarding claim 19, the claim rejection of claim 1 is representative of claim 19. See Petteruti et al.,

teachings wherein the step of sending the print data from the processing unit to the printer, is performed

by requesting the printer server to print data sent in a number of messages (**column 7:line 66 – column

8:line 1**, multiple data blocks are sent to the printer)

Regarding claim 20, the claim rejection of claim 19 is representative of claim 20. See Petteruti et al.,

teachings of the further step of sending an acknowledgement message from the printer server to the

printer client after the printer server have received a previous decided number of print data request

messages (**column 8:lines 1-4, step 16**).

Regarding claim 24, the claim rejection of claim 1 is representative of claim 24. See Petteruti et al.,

teachings of stopping the keep alive timer (**column 6:lines 26-36**, the printer receives instruction to

select a broadcast link, then a timer starts. The connection request closes if the timer runs out at step

85g).

Regarding claim 25, the claim rejection of claim 24 is representative of claim 25. See Petteruti et al.,

teachings of requesting a reconnection of the session defined by the session identifier in a message sent

from the printer client to the printer server (**column 7:lines 14-28**, host sends a retry packet with the

sequence number and source address that identifies the current session when the host does not receive

an expected response).

Regarding claim 26, the claim rejection of claim 25 is representative of claim 26. See Petteruti et al.,

teachings of sending a response according to whether the reconnection is granted or not in a message

from the printer server to the printer client (**column 7:lines 28-49**, printer checks if source address

matches and sends an accept packet if connection request is accepted).

Regarding claim 27, the claim rejection of claim 26 is representative of claim 27. See Petteruti et al.,

teachings of continuing the printing process by continuing to send print data request messages, starting

with the print data subsequent to the last received print data acknowledgement message (**column 7:lines

22-26**, host retires the packet with an incremented sequence number that corresponds to the last tried

packet).

Regarding claims 28 and 30, the claim rejection of claim 1 is representative of claims 28 & 30. See

Petteruti et al., teachings of sending requests to stop the print job and to stop the connection in messages

from the printer client to the printer server (**figure 7B**, when the data transfer is successful, the lack of

data sent by the host lets the printer know that the print job has ended and that the connection will be

closed as the host device returns to step 152, which in **figure 7** is the start of the process before a

connection can be made. **Column 7:lines 29-31**, the printer receives the session number from the host

during packet transmission).

Regarding claims 29 & 31, Petteruti et al., & Mettala teach an apparatus according to claims 28 & 30,

respectively, wherein the print job is stopped and the connection is closed after data transmission is

successful (**figure 7B**, when the data transfer is successful, the lack of data sent by the host lets the

printer know that the print job has ended and that the connection will be closed as the host device returns

to step 152, which in **figure 7** is the start of the process before a connection can be made. **Column

7:lines 29-31**, the printer receives the session number from the host during packet transmission).

However, Petteruti et al., & Mettala do not teach sending response messages from the printer comprising

a confirmation that the print job stop request and the connection close request have been fulfilled. In the

specification, applicant discloses a printer with a print job stop response step (page 14, lines 13-19) and a connection close response step (page 14, lines 21-24) that confirm commands sent by the client. Petteruti et al., teaches the client/device (**column 10:lines 41-49**) that assumes the responsibility to control print job stop and connection end steps without the need for the printer to send a response message. Both the steps disclosed in the applicant's specification and the steps disclosed by Petteruti et al., function to stop the print job and end the connection without causing error.

Accordingly, it would have been obvious and within the skill level of one of ordinary skill in the art at the time of the invention to select a print job stop method and a connection close method sufficient to stop a print job and close a connection in a wireless system based on the teachings of Petteruti et al., and the requirement to end a print job and close a connection.

Regarding claim 32, the claim rejection of claim 1 is representative of claim 32. See Petteruti et al., teachings of stopping the sending of keep alive messages when a connection is removed (**figure 7B**, keep alive messages (i.e. packets) are halted when data transmission ends and the connection closes at step 210).

Regarding claims 33 & 34, the claim rejection of claim 1 is representative of claims 33 & 34. See Petteruti et al., teachings of a computer program product comprising readable program for causing a computer within a processing unit or printer in a communication system to control an execution of the steps of claim 1 (**column 3:lines 47-51** computer program).

Claims *35, 36, 37, 38, 40, 44, 45, 47, 48, 49, 50, 51, & 52* recite identical features as claims *1, 6, 8, 8, 12, 17, 19, 24, 25, 27, 28, 30, & 32,* respectively, except claims *35, 36, 37, 38, 40, 44, 45, 47, 48, 49, 50, 51, & 52* are apparatus claims. Thus, arguments similar to that presented above for claims *1, 6, 8, 8, 12, 17, 19, 24, 25, 27, 28, 30, & 32* are equally applicable to claims *35, 36, 37, 38, 40, 44, 45, 47, 48, 49, 50, 51, & 52.*

Claims *53, 54, 55, 56, 57, 60, 61, 64, 65, 66, 67, 68, & 69* recite identical features as claims *1, 7, 10, 12,*

14, 18, 20, 24, 26, 29, 31, 32, & 1, respectively, except claims *53, 54, 55, 56, 57, 60, 61, 64, 65, 66, 67,*

68, & 69 are apparatus claims. Thus, arguments similar to that presented above for claims *1, 7, 10, 12,*

14, 18, 20, 24, 26, 29, 31, 32, & 1 are equally applicable to claims *53, 54, 55, 56, 57, 60, 61, 64, 65, 66,*

67, 68, & 69.

Claims 11 & 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Petteruti et al. (US 6,379,058) & Mettala (*Bluetooth Protocol Architecture*) & Dehority (US 5,129,639).

Regarding claim 11, Petteruti et al., & Mettala teach the method according to claim 10, but do not teach

including sending a further configuration request message from the printer client to the printer server,

wherein the message includes a suggestion of configuration options which differs from earlier suggestions

of configuration options.

　　However, Dehority teaches a printer configuration control system that **(column 4:lines 19-23)**

notifies the user if a failure/mismatch occurs, and gives the opportunity for the user to change printing

configuration.

　　Accordingly, it would have been obvious to one skilled in the art at the time of the invention to

have used the printer configuration control system ability to change the configuration taught by Dehority in

the method taught by Petteruti et al., & Mettala because it allows for alteration s to match the currently

available configurations instead of relying on a best-fit.

Claim *39* recites identical features as claim *11* except claim 39 is an apparatus claim. Thus, arguments

similar to that presented above for claim *11* are equally applicable to claim *39.*

Claims 15-16, 41-43, & 58-59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Petteruti et al. (US 6,379,058) & Mettala (*Bluetooth Protocol Architecture*) & Mahany et al. (US 5,682,379).

Regarding claims 15 and 16, Petteruti et al., & Mettala teach the method according to claim 1, wherein a

keep alive timer is implemented in the printer server, and the time is started each time a valid message is

received from the remote endpoint, and if the time ends, the connection closes (see Petteruti et al.,

teachings in **column 6:lines 26-36**, wherein the printer receives instruction to select a broadcast link,

then a timer starts. The connection request closes if the timer runs out at step 85g). Petteruti et al., &

Mettala do not teach a keep alive timer implemented in the printer client.

However, Mahany et al., teach (**column 5:lines 47-63**) a terminal/client and printer connected in

an RF microLAN network where the printer (**column 10:lines 58-59**) is set as the microLAN master

device and the slave devices (i.e. terminal/client) request (**column 12:lines 15-26**) data transfer at time

period 217, starting time period 227 which keeps the data transfer communication alive until it is

transferred in time period 221 at which time data transfer is over and connection closes.

Accordingly, it would have been obvious to one skilled in the art at the time of the invention to

have used the client keep alive timer in the method of Petteruti et al., & Mettala because it avoids

collisions between multiple devices sending messages to the master device (**column 12:lines 21-24**).

Claims *41, 42, 43, 58, & 59* recite identical features as claims *15, 15, 16, 15, & 15*, respectively, except

claims *41, 42, 43, 58, & 59* are apparatus claims. Thus, arguments similar to that presented above for

claims *15, 15, 16, 15, & 15* are equally applicable to claims *41, 42, 43, 58, & 59.*

Claims 21-23, 46, & 62-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Petteruti et al. (US 6,379,058) & Mettala (*Bluetooth Protocol Architecture*) & Brown et al. (US 6,163,538).

Regarding claims 21 & 22, Petteruti et al., & Mettala teach the method according to claim 1, but do not

teach indicating that the printer is out of paper in a message sent from the printer server to the printer

client, nor do they teach indicating that the printer is refilled in a message sent from the printer server to

the printer client.

However, Brown et al., teach a message regarding the printer ready status in accordance with a

out-of-paper status (**column 15:lines 16-25**, the return link response indicated whether or not the printer

is ready to receive data due to an out-of-paper signal. The printer will send a response that indicates a

ready to receive message when the out-of-paper status is resolved (i.e. paper refilled)).

Accordingly, it would have been obvious to one skilled in the art at the time of the invention to have used the paper status indication taught by Brown et al., as part of the steps taught by Petteruti et al., & Mettala, because it maintains more specific communication as to why the printer is unavailable, which allows the client user to respond more quickly to a out-of-paper response.

Regarding claim 23, the claim rejection of claim 22 is representative of claim 23. See Petteruti et al., teachings of starting with the print data subsequent to the last received print data acknowledgement message (**column 7:lines 14-28**, host sends a retry packet with the sequence number and source address that identifies the current session when the host does not receive an expected response).

Claims *46, 62, & 63* recite identical features as claims *23, 21, & 22*, respectively, except claims *46, 62, & 63* are apparatus claims. Thus, arguments similar to that presented above for claims *23, 21, & 22* are equally applicable to claims *46, 62, & 63*.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kyle Pendergrass whose telephone number is (703) 306-3445. The examiner can normally be reached on Monday-Friday 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiners supervisor, David K. Moore can be reached on (703) 308-7452. The fax phone number for the organization where this application or proceeding is assigned in (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application of proceeding should be directed to the receptionist whose telephone number is (703) 305-9700.

KING Y. POON
PRIMARY EXAMINER